REMARKS

Claims 42 – 48, 50, 51, and 55 – 57 are pending and under consideration in the above-identified application, and Claims 1 – 41 and 52 – 54 were previously cancelled.

In the Office Action, Claims 42 – 48, 50, 51, and 55 – 57 were rejected.

In this Amendment, Claims 42, 50 and 51 have been amended, and Claim 56 has been cancelled. No new matter has been introduced as a result of this Amendment.

Accordingly, Claims 42 – 48, 50, 51, 55 and 57 remain at issue.

I. 35 U.S.C. § 112 Second Paragraph Rejection of Claims

Claims 42 – 48, 50, 51, and 55 – 57 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 42 has been amended by removing the phrasing "into the polymer are introduced ionic groups" deemed unclear by the Examiner and adding the phrasing "said polymer is processed with an acid and/or an alkali to introduce ionic groups."

Claim 50 has been amended by clarifying that it is directed to the preprocessed polymer That is, the preprocessed polymer is at least one selected from the group consisting of an acrylonitrile-butadiene-styrene resin (ABS), a styrene-acrylonitrile resin (SAN), and an acrylonitrile-butadiene rubber (ABR).

The rejection of Claim 56 is now moot in view of its cancellation.

Accordingly, Applicants respectfully request that these claim rejections be withdrawn.

II. 35 U.S.C. § 102(b) and 103(a) Rejection of Claims

Claims 42– 44, 48, 50, 51, and 55 – 57 were rejected under 35 U.S.C. § 102 (b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious Horwitz et al. ("Horwitz") (U.S. Patent No. 5,281,631).

Claim 42 is directed to a cleansing method.

In relevant part, Claim 42 recites:

> "…a polymer having 20 to 50 mol % of acrylonitrile and
> 50 to 80 mol % of at least one of styrene and conjugated diene as constituent unit,
> …
> said polymer is processed with an acid and/or an alkali to introduce ionic groups,
> said ionic groups are at least one selected from the group consisting of
> --CH2PO(OH)2-groups, --NO2 groups or salts thereof…"

That is clearly unlike Horwitz.

Horwitz fails to fairly teach or suggest that the introduced ionic groups are at least one selected from the group consisting of --CH2PO(OH)2 groups, --NO2 groups or salts thereof.

In fact, Horwitz discloses a polymeric ion exchange resin for extracting metal ions from a liquid waste stream which includes, for example, a polymerizable component selected from the group consisting of vinylidene diphosphonic acid and alkyl/aryl esters of said diphosponic acid, carboxylic acid groups, and hydroxy groups. The disclosed vinylidene diphosphonic acid has a chemical structure that is similar to only "--PO(OH)2 groups." Moreover, as pointed out by the Examiner, Horwitz does disclose other claimed chemical structures.

However, Nowhere does Horwitz fairly teach or suggest chemical structures such as --CH2PO(OH)2 groups, --NO2 groups, as required by Claim 42. See at least Column 3, and Column 8, as identified by the Examiner.

Moreover, Horwitz teaches polymerizing monomers that already include ionic groups, i.e. a polymerization reaction, but fails to teach or suggest introducing ionic groups into a polymer having no ionic group, i.e. a macromolecular reaction.

In addition, as required in Claim 57 the polymer is mixed into a starting material composed at least of wood, plastics, paper, glass and metal, and a resulting mixture is molded to a pre-set shape. That is, the present invention uses universal plastics, whereas Horwitz only teaches the use of monomer unit of "vinylidene diphosphonic acid" as an essential component and does not teach or suggest using universal plastic. Because of the use of universal plastic the claimed ion-exchange resin inherently does not include cross-linking agent, which enables optimum ionic group induction rate as well as optimum molar weight, whereas Horwitz teaches polymerizing with cross-linking agents and thus has no optimum weight molecular weight.

Thus, Claim 42 is patentable over Horwitz, as are dependent Claims 43 – 44, 48 -51, and 55, 57, for at least the same reasons.

Accordingly, Applicants respectfully request that the 102(b) and 103(a) claim rejections be withdrawn.

III. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 45- 47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over

Horwitz and Grant et al. ("Grant") (U.S. Patent No. 5,242,503).

Claims 45- 47 are dependent on Claim 42, shown above to be patentable over Horwitz.

Moreover, in addition to Horwitz, Grant also fails to teach or suggest "a polymer having 20 to 50 mol % of Acrylonitrile and 50 to 80 mol % of at least one of styrene and conjugated diene as constituent unit, wherein the polymer is processed with an acid and/or an alkali to introduce ionic groups, said ionic groups are at least one selected from the group consisting of --CH2PO(OH)2-groups, --NO2 groups or salts thereof."

Therefore, Horwitz and Grant may not properly be combined to reject Claim 42. As such, Claim 42 is patentable over Horwitz and Grant, as are dependent Claims 45 - 47, for at least the same reasons.

Accordingly, Applicants respectfully request that these claim rejections be withdrawn.

IV. Conclusion

In view of the above amendments and remarks, Applicant submits that Claims 42 – 48, 50 – 51, 55 and 57 are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

If the claims are not found to be in condition for allowance, the Examiner is requested to contact the undersigned to schedule an interview before the mailing of the Office Action. Any communication initiated by this paragraph should be deemed an Applicant initiated interview.

Respectfully submitted,

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